

# 6 x 9 DATA SHEETS.

If accepted, only data not available in engineers' handbooks desired.

These data sheets are intended to be cut into four sections, 6 x 9 inches in size, as indicated by the straight lines. They may then be bound into note book form for convenient reference by means of staples inserted in holes punched at the points indicated. Suitable binders for these data sheets will be supplied for 50 cents each.

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## WEIGHTS AND AREAS OF COLD ROLLED STEEL SHAFTING.

Diameter, Inches.	Area, Square Inches.	Circumference Inches.	Weight per Foot, Pounds.	Area, Square Inches.	Circumference, Inches.	Weight per Foot, Pounds.
$\frac{3}{16}$	.0276	.5890	.095	$3.7583$	$6.8722$	$12.80$
$\frac{1}{4}$	.0491	.7854	.167	$3.9761$	$7.0686$	$13.52$
$\frac{5}{16}$	.0767	.9817	.260	$4.2000$	$7.2649$	$14.35$
$\frac{3}{8}$	.1104	1.1781	.375	$4.4301$	$7.4613$	$15.07$
$\frac{7}{16}$	.1503	1.3744	.511	$4.6664$	$7.6576$	$15.89$
$\frac{1}{2}$	.1963	1.5708	.667	$4.9087$	$7.8540$	$16.70$
$\frac{9}{16}$	.2485	1.7671	.845	$5.1572$	$8.0503$	$17.55$
$\frac{5}{8}$	.3068	1.9635	1.05	$5.4119$	$8.2467$	$18.41$
$\frac{11}{16}$	.3712	2.1598	1.26	$5.6727$	$8.4430$	$19.31$
$\frac{3}{4}$	.4418	2.3562	1.50	$5.9396$	$8.6394$	$20.21$
$\frac{13}{16}$	.5185	2.5525	1.77	$6.2126$	$8.8357$	$21.15$
$\frac{7}{8}$	.6013	2.7489	2.05	$6.4918$	$9.0321$	$22.09$
$\frac{15}{16}$	.6903	2.9452	2.35	$6.7771$	$9.2284$	$23.06$
$\frac{1}{16}$	.7854	3.1416	2.68	$7.0686$	$9.4248$	$24.05$
$\frac{1}{16}$	.8866	3.3379	3.02	$7.6699$	$9.8175$	$26.09$
$\frac{1}{8}$	.9940	3.5343	3.38	$7.9798$	$10.014$	$27.16$
$\frac{1}{4}$	1.1075	3.7306	3.77	$8.2958$	$10.210$	$28.22$
$\frac{3}{16}$	1.2272	3.9270	4.17	$8.9462$	$10.603$	$30.43$
$\frac{1}{8}$	1.3530	4.1233	4.61	$9.2806$	$10.799$	$31.58$
$\frac{1}{4}$	1.4849	4.3197	5.05	$9.6211$	$10.996$	$32.73$
$\frac{5}{16}$	1.6230	4.5160	5.52	$10.321$	$11.388$	$35.20$
$\frac{1}{16}$	1.7671	4.7124	6.01	$10.680$	$11.585$	$36.40$
$\frac{1}{8}$	1.9175	4.9087	6.52	$11.045$	$11.781$	$37.57$
$\frac{1}{5}$	2.0739	5.1051	7.06	$11.793$	$12.174$	$39.40$
$\frac{1}{11}$	2.2365	5.3014	7.61	$12.177$	$12.370$	$41.04$
$\frac{1}{12}$	2.4053	5.4978	8.18	$4$	$12.566$	$42.75$
$\frac{1}{13}$	2.5802	5.6941	8.78	$4$	$14.186$	$13.352$
$\frac{1}{14}$	2.7612	5.8905	9.39	$4\frac{1}{2}$	$15.466$	$13.941$
$\frac{1}{15}$	2.9483	6.0868	10.03	$4\frac{1}{2}$	$15.904$	$14.137$
$\frac{1}{16}$	3.1416	6.2832	10.69	$4\frac{1}{2}$	$17.728$	$14.923$
$\frac{1}{17}$	3.3410	6.4795	11.35	$4\frac{1}{2}$	$19.147$	$15.512$
$\frac{1}{18}$	3.5466	6.6759	12.07	$5$	$19.635$	$15.708$

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## WEIGHT OF A SUPERFICIAL FOOT OF CAST IRON.

Thickness.	Pounds.	Thickness.	Pounds.	Thickness.	Pounds.
$\frac{1}{4}$	9.37	$\frac{7}{8}$	39.81	$1\frac{1}{2}$	56.25
$\frac{3}{8}$	14.06	1	37.50	$1\frac{5}{8}$	60.93
$\frac{1}{2}$	18.75	$1\frac{1}{8}$	42.18	$1\frac{3}{4}$	65.62
$\frac{5}{8}$	23.43	$1\frac{1}{4}$	46.87	$1\frac{7}{8}$	70.31
$\frac{3}{4}$	28.12	$1\frac{3}{8}$	51.56	2	75.00

Computed by W. C. Davids, Rutherford, N. J.

## WEIGHTS OF NUTS AND BOLT HEADS, IN POUNDS.

For Calculating the Weight of Long Bolts.

Diameter of bolt, in inches.	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$
Weight of hexagon nut and head .....	.017	.057	.128	.267	.43	.73
Weight of square nut and head .....	.021	.069	.164	.320	.55	.88
Diameter of bolt, in inches..	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{2}$
Weight of hexagon nut and head .....	1.10	2.14	3.78	5.6	8.75	17
Weight of square nut and head .....	1.81	2.56	4.42	7.0	10.50	21

From Kent's Mechanical Engineers' Pocket Book.

## SPECIFIC GRAVITY AND WEIGHT OF METALS.

	Specific Gravity.	Weight per Cubic Foot, Pounds.	Weight per Cubic Inch, Pounds.		Specific Gravity.	Weight per Cubic Foot, Pounds.	Weight per cubic Inch, Pounds.
Aluminum .....	2.67	166.5	.0963	Iridium .....	.....	1896.	.8076
Antimony .....	6.76	421.6	.2439	Iron, Cast.....	7.218	450.	.2604
Bismuth.....	9.82	612.4	.3454	Iron, Wrought.....	7.70	480.	.2779
Brass—Copper + Zinc.				Lead .....	11.38	709.7	.4106
80      20 .....	8.60	536.3	.3103	Manganese .....	8.00	499.	.2887
70      30 .....	8.40	523.8	.3031	Magnesium .....	1.75	109.	.0641
60      40 .....	8.36	521.3	.3017	Mercury, 60 degrees.....	18.58	846.8	.4900
50      50 .....	8.20	511.4	.2959	Nickel.....	8.8	548.7	.3175
Bronze { Copper 95 to 80.				Platinum .....	21.5	1347.0	.7758
Tin 5 to 20....	8.853	552.	.3195	Silver .....	10.505	655.1	.3791
Cadmium .....	8.65	539.	.3121	Steel .....	7.854	489.6	.2884
Copper.....	8.853	552.	.3195	Tin .....	7.850	458.3	.2652
Gold .....	19.258	1200.9	.6949	Zinc .....	7.00	436.5	.2526

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